

**ABSTRACT OF THE DISCLOSURE**

The present invention provides a wide-sense, non-blocking WDM cross-connect that utilizes a relatively small number of wavelength interchangers. The cross-connect of the present invention comprises first, second and third fabrics and one or more

- 5 wavelength interchangers that interconnect the first and second fabrics. Demands that require a change in wavelength are routed through the first fabric, through one or more of the wavelength interchangers, and through the second fabric. Demands that do not require a change in wavelength are only routed through the third fabric. A routing algorithm is utilized to ensure that any sequence of connection requests and withdrawals
- 10 can be routed without disturbing any currently routed requests.